Administrative Procedure

PRC-PRO-SH-409

Industrial Hygiene Monitoring, Reporting and Records Management

Revision 0, Change 2

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Administrative Use

CH2MHILL
Plateau Remediation Company

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Description of Change

Correct decimal point error in Appendix H. Beryllium action level 0.01 ug/m3 to 0.1 ug/m3.
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Description of Change

Editorial changes to align with current CHPRC procedures format, and reference and form numbers and titles.

TABLE OF CONTENTS

1.0 PURPOSE

This procedure defines the requirements for industrial hygienist (IH) personnel, industrial hygiene technicians (IHTs), and other sampling personnel related to exposure monitoring. It addresses: 1) communicating validated industrial hygiene monitoring results to line management, employees, and occupational medicine; 2) using standardized data collection forms to ensure that required information is obtained for a complete exposure record in accordance with the Occupational Safety and Health Administration (OSHA) recordkeeping requirements: 29 CFR 1910.1020, "Access to employee exposure and medical records" and substance specific standards contained in 29 CFR 1910 Subpart Z, Toxic and Hazardous Substances; and 3) transmittal of completed industrial hygiene monitoring records to the Industrial Hygiene Programs Records Coordinator (IHPRC). It also implements requirements in 10 CFR 851, *Worker Safety and Health Program*, and 29 CFR 1910.1020 pertaining to records retention. This procedure provides indirect instruction to line management through the use of standardized reports that contain requests from the IH personnel regarding distribution of individual employee monitoring results. Instructions are also provided to ensure that exposure data is collected in a consistent manner.

NOTE: *Definitions for terms specific to this document are presented in Appendix A.*

2.0 SCOPE

This Level 2 Management Control Procedure is applicable to CH2M HILL Plateau Remediation Company (CHPRC) Team employees. This procedure applies to forms used to document monitoring and sampling performed by IH personnel to assess potential work place exposures, and to the data generated from personal, direct reading, area, bulk, and wipe samples that are collected to assess actual or potential employee exposure.

This document does ***not*** address chain of custody of industrial hygiene samples, which should be performed according to best management practices.

This procedure does ***not*** cover confined space entry documentation. Forms associated with confined space entry evaluations are covered in PRC-RD-SH-11258, *Confined Spaces*.

All changes to the forms associated with this procedure must be coordinated through CHPRC Occupational Safety and Health Programs to assure compliance with requirements for "managed forms" established by PRC-PRO-IRM-112, *Forms Administration*.

This procedure does ***not*** refer to medical monitoring results which are forwarded to the employee's manager from the Occupational Medicine provider to be given to the employee.

This procedure is an implementing mechanism of PRC-MP-MS-003, *Integrated Safety Management System/Environmental Management System Description*, elements "*Identify Hazards, Environmental Impacts and Environment, Safety and Health (ES&H) Requirements*" and "*Perform Work within Controls*".

3.0 IMPLEMENTATION

This document is effective upon publication.

4.0 PROCESS

4.1 Selecting Forms

Actionee	*Step*	*Action*
IH Personnel	1.	Select the appropriate form(s) for use according to the type of monitoring performed and in accordance with other CHPRC Occupational Safety and Health (OSH) procedures. a. For area/personal air sampling, use *Industrial Hygiene Air Sample Survey form* (Site Forms A-6004-728 or A-6004-729). **NOTE**: Site forms having the "A-6001-XXX.1" designation are forms with the OUO statement on them. They are to be used when documenting personal sample results. b. For surveys performed with direct reading instruments, other than noise, noise dosimetry or WBGT, use *Industrial Hygiene Direct Reading Instrument Survey form* (Site Forms A-6004-731). If the data will be tied to an individual (evaluation of personal exposures), use Site Form A-6004-734. c. For noise surveys including octave band analysis, use the *Industrial Hygiene Noise Survey form* (Site Forms A-6004-736). d. For noise dosimetry surveys, use the *Industrial Hygiene Noise Dosimetry Survey form* (Site Forms A-6004-735). e. For bulk sample surveys, use the *Industrial Hygiene Bulk Sample Survey* form Site Forms A-6004-738). f. For surveys using a Wet Bulb Globe Thermometer (WBGT), use the *Industrial Hygiene WBGT Survey form* Site Forms A-6004-739*)*. g. For wipe sampling surveys, use the *Industrial Hygiene Wipe Sample Survey* form (Site Forms A-6004-730).
	2.	If monitoring will be performed in such a manner that the field measurements do not lend themselves to a form designated above, contact the IH Manager or Technical Authority for guidance to develop method to capture mandatory data in a format that will allow subsequent interpretation and entry into the HIH2 database. **NOTE**: *The HIH2 database is for library use only, and does not contain record copy information.*

Actionee	Step	Action
	3.	Contact CHPRC Occupational Safety and Health Programs to request development of new form, if it is determined there is an on-going need for an alternative format for data collection.

4.2 Completing Forms

Actionee	Step	Action
IH personnel	1.	Complete the form in accordance with instructions provided in Site Forms for the selected form(s). **NOTE**: *Appendix B, Operation and Task List, and Appendix C, Job Title List, provide the specific information to be entered for these items.*
	2.	Attach any graphs, histograms, photos or other information converted to PDF format such as data logs to the workflow after the form has been attached.
	3.	After completing the information on the selected form, initiate an IH workflow. **NOTE 1**: *The IH Workflow manual provides guidance for completing the workflow.* **NOTE 2**: *Personal exposure information is provided on a regular basis to the site occupational medical contractor.*
	4.	Determine the notification requirements for the substance sampled. **NOTE**: *Employees must generally be notified within 15 working days of receiving the final exposure report, but more stringent time limits are required for some substances regulated under substance specific OSHA standards. Appendix D provides guidance on these requirements but is subject to change. Refer to the specific standard (general industry or construction) when dealing with DOE and OSHA regulated substances.*
	5.	Determine whether the data collected indicates that the applicable action level or exposure limit is exceeded. If so, list the corrective actions that will be implemented to reduce worker exposure.

Actionee	*Step*	*Action*

6. Notify each employee on whom personal, breathing zone samples were collected. This notification will:
   - Be in writing;
   - Provide sufficient information that the employee is able to understand the sample results and measures that are taken to protect employees from exposure.

   NOTE: *Specific requirements for this notification are included in several OSHA requirements. However, as a good management practice, sampled employees (and optionally employees' managers) shall be notified of the results of industrial hygiene monitoring results for personal sampling. Appendix E contains a recommended format for communicating sampling results to employees. While other formats can be used, this format contains the information required for employee notifications. To aid in employee understanding of sampling results, IH personnel may want to participate in the employee notification.*

7. Post area, wipe, and personal sampling results in the area of the sampled or monitored task to provide information to employees who may work in the area. The result postings will:
   - Have individual worker identifiers removed to maintain confidentiality;
   - Contain a brief explanation of the meaning of the results for each agent tested by including the Threshold Limit Value (TLV) and action level for each agent if there is one or if one is applied;
   - Contain the date posted and the date the posting may be removed, which will be a minimum of one month later;
   - Be posted at a conspicuous central location if the samples were collected in association with a short term project;
   - Be placed at or near the location where the samples were taken if the samples were collected in association with a long term (several months) project;
   - Be posted at a location decided on by the industrial hygienist and building manager, or if the samples were collected outside, at a location decided upon by the industrial hygienist and project manager.

   NOTE 1 – Personal Sampling Results: *Multiple sample results can be placed on the same sheet. To the extent possible, similar explanations should be used for future sampling of the same agent. Contact the IH Manager regarding what forms have already been used. A recommended blank form, a completed form, and a sample explanation sheet are shown in Appendices F-H. The posting should contain similar information to the examples provided in the appendices.*

   NOTE 2 – Wipe and area sampling results: *It is not necessary to provide written individual notifications since the sample was not necessarily representative of the employee's exposure during the task. However, the results of the sampling should be posted near the area*

Actionee	Step	Action
		where the sample(s) were collected as noted above. See Note 1 for more information relating to posting of results. It is not necessary to post sampling results for samples collected to assess confined space entries except as required by the associated guidance document (GD), procedure (PRO), or requirements document (RD).
Building Manager	8.	Maintain the integrity of sampling result postings. If additional/replacement postings are necessary, contact the IH to generate these postings.
IHPRC	9.	Conduct a QA Check of the completed workflow and electronically sign the workflow indicating that the results are viewable and legible. **NOTE:** *Additional information is provided in the IH Workflow manual, which is an administrative control manual (HNF-30005).*
	10.	Upon completion of the IH Workflow in IDMS, provide indexing information and move to IH Records. **NOTE:** *Additional information is provided in the IH Workflow manual.*

4.3 Handling Forms Marked as OUO

Actionee	Step	Action
IH personnel and IHPRC	1.	With respect to forms marked as OUO: a. Provide personal exposure information only to those individuals with a "need to know" such as the employee to whom the data applies, the employee's line management, occupational medicine personnel, and other industrial hygiene staff members. b. Keep forms with personal exposure information unavailable for viewing by those who do not have a "need to know". c. When transmitting forms containing personal exposure information: • place hard copy forms in envelope labeled “TO BE OPENED BY ADDRESSEE ONLY” • forms transmitted via email shall have “OUO” as the first word in the subject line

4.4 Reviewing and Approving Forms

Actionee	Step	Action
IH personnel	1.	Review and approve forms using the IDMS IH Workflow. **NOTE:** *Additional information is provided in the IH Workflow manual.*
IHPRC	2.	Review and approve forms using the IDMS IH Workflow.

Actionee	*Step*	*Action*
		NOTE: *Additional information is provided in the IH Workflow manual.*

4.5 Access to Industrial Hygiene Exposure Data

4.5.1 Employee Exposure Measurements

Actionee	*Step*	*Action*
IH personnel	1.	Transmit OUO data in accordance with OSHA Regulations 29 CFR 1910.1020, 10 CFR 851 and PRC-PRO-IRM-184, *Information and Protection Clearance*. **NOTE**: *These files may be transmitted electronically as long as they are handled as OUO.* a. Stamp, mark, or place "OUO" on documents with this designation. b. Place the data in the envelope bearing the name of the addressee along with a notice that reads" TO BE OPENED BY ADDRESSEE ONLY," and seal the envelope.
	2.	Establish access control measures for files containing OUO data.

4.5.2 Employee Requests for Exposure Assessment Data

Actionee	*Step*	*Action*
IH personnel	1.	Coordinate requests from employees or authorized employee representatives (per 29 CFR 1910.1020) for accessing their industrial hygiene monitoring results by contacting their IH representative. The IH representative will access IDMS or HIH2 via the IHPRC to obtain the requested information. **NOTE**: *Access to monitoring assessments must be provided within 15 working days; if this is not possible, the employee or employee representative must be informed during the 15 day period of the reason for the delay, and the earliest date when the assessments can be made available.*
	2.	Review the employee exposure monitoring assessments provided by the IHPRC, and transmit documents to the employee or authorized employee representative making the request. Provide a copy of the Transmittal Letter to the IHPRC. If information is transmitted via email, send copy to ^IH Management mail box.

4.5.3 IH Requests for Exposure Assessment Data

Actionee	*Step*	*Action*
IH personnel	1.	Industrial hygienists desiring industrial hygiene information from HIH2 should contact the IHPRC using the procedure outlined below. **NOTE**: *Depending on the information desired, the requests can include reports generated from the HIH2 or photocopies of the actual data sheets used to record the information. The IHPRC manages hard copy records, which are temporarily stored on site and then transferred to the RHA. It is therefore important that sufficient information be provided to quickly retrieve the proper information.*
	2.	Contact the IHPRC at **376-8886**.
	3.	Provide the necessary information to the IHPRC/backup. • Indicate whether a computer database report is sufficient, or whether it is necessary to obtain copies of the field sheets. • Indicate when you would like to receive the requested information. • Indicate how you would like the information delivered. **NOTE**: *Depending on the request, it could be delivered by plant mail, fax, or directly to your computer printer.*
	4.	If the information is to be provided to others, ensure that it is treated as "OUO" if there are personal identifiers associated with it. Review the information with the person receiving it to ensure that they are aware of both the meaning and limitations of the data. **NOTE**: *The generated reports and field sheets are intended to be used by industrial hygienists and may result in some confusion if provided to others without explanation.*

4.5.4 Industrial Hygiene Records Management

Actionee	*Step*	*Action*
IHPRC	1.	Serve as the Hanford primary point of contact for industrial hygiene records management.
	2.	Establish a centralized CHPRC Industrial Hygiene records management system that facilitates compliance with the requirements of 10 CFR 851 and 29 CFR 1910.1020.
	3.	Administer the HIH2 computerized industrial hygiene database to provide rapid access and summary reports of industrial hygiene exposure information.
	4.	Maintain appropriate storage, handling and access control of OUO documents that relate to personal exposure, including employee exposure

Actionee	*Step*	*Action*
		monitoring assessments notification data packages received from IH personnel. IH Records (both hard copy and electronic) will be kept in compliance with both OSHA and DOE requirements, as well as PRC-PRO-IRM-10588, *Records Management Processes,* and PRC-PRO-IRM-184. Recent records will be kept on-site, while older records will be stored off-site. This function will be performed by the IHPRC in accordance with PRC-PRO -IRM-10588 and PRC-PRO-IRM-184.
	5.	Respond to requests from the project IH for access to employee exposure measurements submitted by employees or their authorized representatives.

5.0 FORMS

Industrial Hygiene WBGT Survey Form (A-6004-739)
Industrial Hygiene Air Sample Survey Form (A-6004-728)
Industrial Hygiene Air Sample Survey Form – OUO (A-6004-729)
Industrial Hygiene Direct Reading Instrument Survey Form (A-6004-731)
Industrial Hygiene Direct Reading Instrument Survey Form – OUO (A-6004-734)
Industrial Hygiene Noise Dosimetry Survey Form (A-6004-735)
Industrial Hygiene Noise Survey Form (A-6004-736)
Industrial Hygiene Bulk Sample Survey Form (A-6004-738)
Industrial Hygiene Wipe Sample Survey Form (A-6004-730)

6.0 RECORD IDENTIFICATION

Records requirements as they apply to the documents covered in this procedure are implemented in accordance PRC-PRO-IRM-10588, *Records Management Processes*.

Notification of Industrial Hygiene Monitoring Results is generated from this procedure. It is an exposure and quality record and must be retained according to the National Archives and Records Administration (NARA)-approved record schedule for the U.S. Department of Energy (DOE) (currently 75 years). Secretary of Energy (SEN) moratorium on destruction - All exposure records are currently superseded by an indefinite moratorium on destruction of epidemiological information. This moratorium will remain in effect pending further direction from DOE.

All field forms and associated notes used to document work place exposure conditions, exposure calculations, and monitoring plans are records. Completed records must be forwarded to the IHPRC for disposition in accordance with DOE Records Schedule 1; MEDICAL, HEALTH, AND SAFETY RECORDS (DOERS 1.4.c.).

Records Capture Table

Type of Document	Submittal Responsibility	Retention Responsibility
Completed: Industrial Hygiene WBGT Survey Form Industrial Hygiene Air Sample Survey Form Industrial Hygiene Air Sample Survey Form – OUO Industrial Hygiene Direct Reading Instrument Survey Form Industrial Hygiene Direct Reading Instrument Survey Form – OUO Industrial Hygiene Noise Dosimetry Survey Form Industrial Hygiene Noise Survey Form Industrial Hygiene Bulk Sample Survey Form Industrial Hygiene Wipe Sample Survey Form Completed IH Monitoring Form	IH personnel for company initiating monitoring	CHPRC Industrial Hygiene Records Coordinator

7.0 SOURCES

7.1 Requirements

10 CFR 850, *Chronic Beryllium Disease Prevention Program*
10 CFR 851, *Worker Safety and Health Program*
29 CFR 1910.1020, *Access to Employee Exposure and Medical Records*
29 CFR 1910 and 1926, *Substance Specific Standards*
29 CFR 1910 Subpart Z, *Toxic and Hazardous Substances*
CRD M 231.1-2, Supp Rev 6, *Occurrence Reporting and Processing of Operations Information*
SCRD O 471.3, *Identifying and Protecting Official Use Only Information*

National Archives and Records Administration, http://www.archives.gov/index.html

NOTE: *For the tables in this section under the requirement "type" column, "V" means verbatim and "I" means interpreted.*

#	Requirement	Type V or I	Source
1.	Each employee exposure record shall be preserved and maintained for at least seventy five years. **NOTE**: *OSHA requires a minimum retention of thirty (30) years.*	I	NARA-approved record schedule

#	Requirement	Type V or I	Source
2.	Employees must generally be notified within 15 working days of receiving the exposure report, but more stringent time limits are required for some substances regulated under substance specific DOE and OSHA standards. Refer to the specific standard when dealing with DOE and OSHA regulated substances. **NOTE:** *Appendix D provides examples of current notification requirements.*	I	29 CFR 1910.1020.e, 10 CFR 850.24g
3.	Workers must be notified when monitoring results indicate they were overexposed to hazardous materials.	I	10 CFR 850.20(b)(3)
4.	Notify the employee of the results of the sampling. This notification shall be in writing, and should provide sufficient information that the employee is able to understand the sample results and any measures that are being taken to protect employees from exposure.	I	10 CFR 850.20(b)(3)
5.	Handle employee exposure measurements as "Official Use Only (OUO)" which require limited access per PRC-PRO-IRM-184.	I	SCRD O 471.3
6.	Store in-progress forms in a designated desk, file cabinet drawer or Government-owned computer except when working with the form.	I	SCRD O 471.3
7.	Whenever an employee or designated representative requests access to a record, the employer shall assure that access is provided in a reasonable time, place, and manner. If the employer cannot reasonably provide access to the record within fifteen (15) working days, the employer shall within the fifteen (15) working days apprise the employee or designated representative requesting the record of the reason for the delay and the earliest date when the record can be made available.	I	29 CFR 1910.1020(e)(1)(i)
8.	Establish a centralized CHPRC Industrial Hygiene records management system that facilitates compliance in accordance with PRC-PRO-IRM-10588. Hardcopy forms will be kept as paper files, while electronic forms will be stored in IDMS or equivalent electronic format.	I	10 CFR 851.26(a)(1); 29 CFR 1910.1020(e)(1)(i)

8.2 References

HNF-30005, *IH Workflow Manual*
PRC-MP-MS-003, *Integrated Safety Management System/Environmental Management System Description*
PRC-PRO-IRM-112, *Forms Control*
PRC-PRO-IRM-184, *Information and Protection Clearance*
PRC-PRO-IRM-8310, *Document Control Processes*
PRC-PRO-IRM-10588, *Records Management Processes*
PRC-RD-SH-11258, *Confined Spaces*

APPENDIX A
Definitions

TERM	DEFINITION
Action Level	An exposure concentration, generally considered as the applicable regulatory exposure limit for hazardous chemical and physical agents, which triggers certain provisions defined by regulation that must be implemented such as periodic measurement of worker exposure, worker training, and medical monitoring.
Employee Exposure Measurement	A quantitative monitoring or sampling result that was obtained to assess an actual or potential exposure level. Examples would include personal samples and area samples that were obtained to estimate employee exposure levels, such as confined space monitoring.
Exposure	An employee subjected to a toxic substance or harmful physical agent in the course of employment through any route of entry (inhalation, ingestion, skin contact, or absorption), and including past exposure and potential exposure. It does not include situations where the employer can demonstrate that the toxic substance or harmful physical agent is not used, handled, stored, generated, or present in the workplace in any manner different from typical nonoccupational situations.
IH Personnel	An industrial hygienist or industrial hygiene technician involved in the monitoring or sampling process.
Managed Forms	Forms originated on the Hanford Site in conventional or electronic format that: 1. Cross divisional or departmental lines, within or across contractor organization/agency; and/or 2. Are required by state or federal law, DOE order, company policy or procedure, or are defined in a controlled manual; and/or 3. Are required for audit traceability or otherwise becomes an official document of record when completed.
Monitoring	The process of quantitatively evaluating the level of a material or agent and comparing the results obtained to acceptable values.

TERM	DEFINITION
Occupational Exposure Limits	ACGIH TLV-TWA: Time-weighted average concentration for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be exposed day after day without adverse effect. OSHA PEL: Maximum level of exposure to a hazardous agent to which an employee may be exposed over a specified time period as mandated by OSHA 29 CFR 1910 or 1926. DOE-Prescribed Exposure Limit: Any mandatory limit on employee exposure to a hazardous chemical, physical or biological agent that is contained in a DOE regulation, order or technical standard.
Sampling	The process of collecting one or more representative samples from the work environment to quantitatively evaluate the level of the chemical or agent present.
Unusual Occurrence	Exposures to hazardous chemicals in excess of OSHA permissible exposure limits when the overexposed employee was not using the appropriate respiratory protection.

APPENDIX B
Operation and Task List

Operation	Task Code	Description
Analytical	BIO	Biological analyses
	CMA	Chemical analyses
	IAN	Instrument analyses - GC, GC-MS, AA
	LBO	Laboratory operations - general
	RAD	Radiologic analyses
	SRC	Laboratory sample receiving/storage
	WCA	Wet chemistry analyses
Asbestos Abatement	C	Cleanup
	E	Pipe removal
	F	Floor tile, rolled flooring, mastic removal
	G	Gasket
	P	Pipe insulation removal
	T	Transite removal
	D	Transite cutting and drilling
	V	Vessel and boilers
	A	Walls and ceilings
	S	Spray encapsulation
	L	Dip lag
	W	Wrapping
	I	Duct Insulation
	M	Flammastic
	R	Valve insulation removal
	O	Other
Battery Operations	CHG	Charging vehicle batteries
	FIL	Filling/adding electrolyte to batteries
Blasting/Grinding	ABR	Abrasive blasting
	BLA	Blasting (with blasting compound)
	CCF	Cast cleaning/finishing
	GBB	Glassbead blasting
	GRD	Grinding/polishing/buffing
	SDC	Sandblasting cabinet
	SDO	Sandblasting (outdoors)
	SHO	Shot blasting - abrasive
Bonding/Gluing	BON	Bonding/gluing (wood or synthetics)
	LAM	Laminating
Ceramics/Glass	CER	Ceramics work
	GSB	Glass blowing
	GSC	Glass cutting
	GSM	Glass making
	KIL	Kilning
Construction	CON	Construction
	CRO	Crane operation
	CSE	Confined space entry
	CWK	Concrete work - pouring, finishing, cutting, busting

Operation	Task Code	Description
	ELW	Electrical work
	FAB	Fabrication
	HEO	Heavy equipment operation
	INS	Insulation
	IRW	Iron/steel work
	LAH	Laborers/helpers
	PLU	Plumbing/pipefitting
	PTO	Pneumatic tool operation - jack hammers, bush guns
	TRK	Truck driving
	WDG	Well drilling
D&D Operations	EXW	Excavation Work
	WPT	Waste Preparation/Transport
	BUD	Building Demolition
	ASR	Asbestos Removal
	EQR	Equipment Removal
	SAA	Sampling Activities
	ODD	Other D&D Activities
Electrical Work	EPR	Electrical parts repair
	ETW	Electrical work
	GEN	Electrical generator operation
Foundry Work	FCG	Forging
	FOP	Furnace operation
	FOU	Foundry operation
	MCM	Mold core making
	MEM	Metal melting
	MMP	Molten metal pouring
	MMS	Metal mold shakeout
	SDP	Sand preparation
Laundry	CLM	Clothing maintenance (machine or hand washing)
	DRC	Dry cleaning
	DYE	Dyeing - coloring or clothing materials
	SPM	Steam pressing
	SPT	Spot removal from clothing
Lead Working	PBA	Lead abatement
	PBB	Burning/torching of lead
	PBC	lead cleanup - HEPA vac/wet wiping
	PBF	Forming - manual manipulation of lead
	PBG	Soldering/tacking of lead using heat source
	PBH	Lead material handling or inspection
	PBO	Lead operations
	PBP	Molten lead pouring
	PBR	Lead paint removal
	PBS	Lead fabrication using power or hand tools
Maintenance	ACR	Air condition/refrigeration repair
	ASB	Asbestos removal
	BMO	Building maintenance and operation
	CSE	Confined space entry

Operation	Task Code	Description
	GER	Generator repair
	GOM	General office machine repair
	INS	Insulation
	LAH	Laborers/helpers
	LUB	Lubrication
	MAI	Maintenance - not otherwise classified
	MAR	Machine repair
	MMW	Maintenance mechanic work
	PLU	Plumbing/pipefitting
	PRM	Process maintenance
	RAG	Roads and grounds maintenance
	SLR	Steam line repair - miscellaneous asbestos
Materials Handling	FLO	Fork lift operations
	LOA	Load/unload miscellaneous items
	PKG	Packaging - foam-in-place and other
	PSH	Paper shredding/handling
	SAH	Storage and handling
Medical/Vet/Health	ANB	Animal husbandry
	ANI	Animal care
	HEC	Health care
	PAT	Pathology
	STL	Sterilization - thermal/chemical
Metal Operations	HIG	Heat treating - metals in baths
	MEO	Metal operations - general
	MER	Metal recovery
	MET	Metalizing - hard facing
	MGF	Magnaflux - ferrous metal inspection
	MOE	Molding/extruding - injection or extrusion
	PAO	Anodizing - metal surface treatment
	PCA	Electroplating with chromic acid
	PLA	Plating surface treatment - plating or electroplating with
	RMP	open surface tank
	SMW	Research metals preparation
	ZYF	Sheetmetal work - bending, shaping, forming of sheetmetal
		Zyglo process - non-ferrous inspection
Metal/Wood Working	AUN	Automatic nailing using power tool (pneumatic)
	CAR	Carpentry/woodworking
	DRG	Drilling
	HON	Honing metal or wood
	HSE	Hand shaping and cutting (non-powered hand tools)
	MCG	Machining - lathes, mills, drilling, punch press, etc.
	MSC	Machine shaping or cutting
Miscellaneous	COO	Computer room operation
	EQO	Equipment operation
	FDP	Food preparation
	FLT	Filter testing
	FOR	Forestry

Operation	Task Code	Description
	FRA	Firing range
	FRF	Firefighting
	IHS	Industrial hygiene/safety operation
	LAS	Laser operations
	ORD	Ordinance testing/use
	OTH	Other operation not previously listed
	PTO	Pneumatic tool operation
	RAO	Radar operations
	REA	Accelerator operation
	REU	Unique operation
	SEC	Security/guard work
	TRK	Truck driving
	ZZZ	Multiple operation - one worker, many operations
Office/Janitorial	ADO	Administrative/secretarial/clerical
	CLE	Cleaning/sweeping - janitorial work
	CSA	Classroom activities
Operations	CGA	Chemical generation/alteration
	CMH	Chemical handling or make-up
	COH	Coal handling/operation
	NBO	Normal building operations
	SPO	Steam plant operations
Painting/Coating	ACP	Aerosol can painting
	ASG	Airless spray gun
	BRP	Brush or roller application
	DPC	Dip coating/painting
	ESP	Electrostatic spray finishing
	FSC	Finish coating - applying coating or solvents to
	PAI	wood/metal/ceramic materials
	SCR	Painting - general
	SPR	Silk screening
	STN	Spray painting - general
	WDT	Stencil painting/inking
		Wood treating/preservation
Pesticide	PCM	Pesticide equipment calibration and maintenance
	PSA	Pesticide application
	PSM	Pesticide mixing
	PSO	Pesticide operation - general
	PSS	Pesticide storage
Reproduction/Photo	AZO	Blueprinting
	BCM	Chemical mixing - black and white photography
	BWR	Black & white processing - photography
	CAL	Carbon arc lighting - photography
	CCM	Color chemical mixing - photography
	CPR	Color printing - photography
	CTP	Can and tank processing - photography
	LIT	Lithographics
	OSP	Offset printing

Operation	Task Code	Description
	OZO	Blueprinting
	PHO	Photocopying/reproduction/xerography
	PHT	Photography
	RPM	Ammonia reproduction machine operation
	XEN	Xenon lighting - photography
Research/Development	RED	Research and development
	REE	Energy research
	REP	Product development
	RER	Environmental research
	RET	Prototype development
	RMP	Research metals preparation
Rubber and Plastics	MOE	Molding or extruding - injection or extrusion
	RNP	Rubber and plastic shop
Surface Preparation	CAM	Compressed air cleaning
	CVD	Cold vapor degreasing
	DTC	Dip tank cleaning
	PPK	Pickling - treatment of metals with acids
	PST	Stripping - removal of surface treatments from metals
	SPC	Spray cleaning - solvent spray guns
	STM	Stream cleaning
	STP	Metal stripping - chemical
	ULT	Ultrasonic cleaning
	WIP	Wiping - manual cleaning of metal parts
Vehicle Maintenance	BDR	Vehicle body repair
	LUB	Lubrication
	TAT	Testing and tuning
	TRR	Tire repair
	VRM	Motor vehicle repair and maintenance
	WAV	Washing/decontamination of vehicles
Waste/Environmental	BID	Bio-denitrification
	CSE	Confined space entry
	CWK	Concrete work - pouring, finishing, cutting, busting
	DEC	Decontamination
	ECT	Environmental chamber cleaning
	EMG	Emergency response
	ERF	ENRAF installation
	HAZ	Hazardous material spill cleanup
	ISV	In-situ vitrification
	LTB	Light ballast spill
	MNT	Tanks farm maintenance i.e. install. or maint. of
	SAM	instrumentation (FIC, ENRAF,...)
	TFO	Environmental sampling and monitoring
	TSD	Tank farm operations
	WAH	Treatment, storage, and disposal operations
	WDG	Waste handling
	WTC	Well drilling
	WTV	Waste tank core drilling/sampling

Operation	Task Code	Description
		Waste tank - in-tank video
Water and Boiler	BOL	Boiler water treatment
	BPO	Boiler operations
	CHL	Gas chlorination
	WAT	Water treatment - potable and wastewater
Welding/Cutting	BRZ	Brazing
	GMA	Gas metal arc welding
	ING	Inert gas - cutting using inert gas on various metals
	OFW	Oxyfuel gas welding/cutting
	OXA	Oxyacetylene - cutting/welding
	PAW	Plasma arc welding
	PSW	Welding/cutting on metal coated or painted surfaces
	RAR	Radiator repair - brazing, Pb melting, flushing, pressure test
	SMA	Shielded metal arc welding
	SOD	Soldering
	TIG	Tungsten inert gas welding
	WEL	Welding operation - multiple types

APPENDIX C
Job Title List

Job Description	Job No.
ACTIVITY ADMINISTRATOR	JT002
ASBESTOS WORKER	JT005
AUTO MECHANIC AND AUTO MACHINIST	JT008
AUTO MECHANIC JOURNEYMAN	JT009
BOILERMAKER	JT011
CARPENTER	JT013
CEMENT FINISHER	JT014
CHEMIST	JT015
CHEMISTRY TECHNICIAN	JT016
CHIEF POWER OPERATOR	JT017
CHLORINATOR OPERATOR	JT018
COMMUNICATIONS SPECIALIST	JT020
CRANE OPERATOR	JT026
D&D WORKER	JT027
DATA ENTRY PERSONNEL	JT029
DRILLER	JT033
DRILLER HELPER	JT034
ELECTRICIAN	JT035
ENGINEER	JT037
ENGINEERING/SCIENTIFIC TECHNICIAN	JT040
FIREARMS INSTRUCTOR	JT044
FIREFIGHTER	JT045
GLAZIER/GLASSWORKER SPECIALIST	JT049
HAZARDOUS MATERIALS SPECIALIST	JT051
HEALTH & SAFETY OFFICER	JT052
HEAVY DUTY MECHANIC	JT055
HEAVY EQUIPMENT OPERATOR	JT056
HEAVY TRUCK DRIVER	JT058
HPT	JT060
INDUSTRIAL HYGIENE TECHNICIAN	JT065
INDUSTRIAL HYGIENIST	JT066
INSTALLATION TECHNICIAN	JT067
INSTRUCTOR	JT068
INSTRUMENT SPECIALIST	JT069
INSULATOR	JT071
INSULATOR APPRENTICE	JT072
IRONWORKER	JT074
IRONWORKER/RIGGER	JT075
LABORATORY WORKER	JT078
LABORER	JT079
LIGHT TRUCK DRIVER	JT081
MACHINIST	JT087
MAINTENANCE	JT089

MANAGER	JT091
MEDIA SPECIALIST	JT094
MILLWRIGHT	JT098
N POWER OPERATOR TRAINEE	JT099
NPO	JT100
OILER	JT102
OPERATIONS - LEAD	JT103
OPERATOR	JT106
OPERATOR TRAINEE	JT107
PAINTER	JT108
PATROLMAN	JT110
PLUMBER/STEAMFITTER PIPEFITTER	JT115
POWER OPERATOR	JT116
QA TECHNICIAN	JT121
QUALITY ASSURANCE SPECIALIST	JT123
R&D MACHINIST	JT124
REACTOR FUELS OPERATOR JOURNEYMAN	JT125
REPRODUCTION OPERATOR	JT128
ROOFER	JT129
SCIENTIST	JT132
SECURITY SPECIALIST	JT135
SHEETMETAL WORKER	JT137
SIGN PAINTER	JT139
SPRINKLER PIPEFITTER	JT141
STOCK ATTENDANT - BINDERY OPERATION	JT144
STOREKEEPER	JT145
SUPERVISOR/FOREMAN/PIC	JT147
SYSTEMS ANALYST	JT150
TECHNICAL INSTRUCTOR	JT152
VENT AND BALANCE OPERATOR	JT159
WELDER	JT160
PLUMBER	JT161
MANAGER/SUPERVISOR/CLERK	JT162
MEDICAL ASSISTANT	JT163
CUSTODIAN	JT164
OFFICE CLERK/MATERIAL COORDINATOR	JT165
TOOL CRIB ATTENDANT	JT166
TEAMSTER	JT168
QUALITY CONTROL TECHNICIAN	JT169
MATERIAL COORDINATOR	JT170
GEOPHYSICAL LOGGING ENGINEER	JT180

NOTE: *If job title sampled is NOT on above list, please indicate "NEW" on the sampling form.*

APPENDIX D
DOE & OSHA-Driven Time Requirements

NOTE: *The information below is provided only to assist in determining employee notification time requirements. Refer to the applicable standards for the actual requirements since the information below may be dated material The values given in the table are for both OSHA General Industry(citation provided) and OSHA Construction Standards unless noted otherwise.*

Beryllium, DOE 10 CFR 850.24……..……10 working (business) days
1,2-dibromo-3-chloropropane; 1910.1044; .....5 working (business) days
1,3-Butdiene; 1910.1051; .....5 working (business) days; Construction None
Acrylonitrile; 1910.1045; .....5 working (business) days
Coke oven emissions; 1910.1029; .....5 working (business) days
Inorganic Arsenic; 1910.1018; .....5 working (business) days
Lead; 1910.1025; .....5 working (business) days
Vinyl Chloride; 1910.1017; .....10 working (business) days; Construction None
Asbestos; 1910.1001; ..... 15 working (business) days; Construction 5 working (business) days
Benzene; 1910.1028; .....15 working (business) days
Cadmium; 1910.1027; ..... 15 working (business) days; Construction 5 working (business) days
Ethylene oxide; 1910.1047; .....15 working (business) days
Formaldehyde; 1910.1048; .....15 working (business) days
Glycol ethers; 1910.1031(proposed) .....15 working (business) days; Construction: None
Methylene chloride; 1910.1052; .....15 working (business) days
Methylene dianiline; 1910.1050; .....15 working (business) days
2-Acetylaminofluorene; 1910.1014; CAS No. 53963; ..... None
3,3'-Dichlorobenzidine (and its salts); 1910.1007; CAS No. 91941;..... None
4-Aminodiphenyl; 1910.1011; CAS No. 92671; ..... None
4-Dimethylaminoazo-benezene; 1910.1015 CAS No. 60117; ..... None
4-Nitrobipheny; l1910.1003; CAS No. 92933;..... None
alpha-Naphthylamine; 1910.1004; CAS No. 134327; ..... None
Benzidine; 1910.1010; CAS No. 92875; ..... None
beta-Naphthylamine; 1910.1009; CAS No. 91598; ..... None
beta-Propiolactone; 1910.1013; CAS No. 57578; ..... None
bis-Chloromethyl ether; 1910.1008; CAS No. 542881; ..... None
Coal tar pitch volatiles (interpretation of term); 1910.1002; ..... None
Ethyleneimine; 1910.1012; CAS No. 151564; ..... None
methyl chloromethyl ether; 1910.1006; CAS No. 107302; ..... None
N-Nitrosodimethylamine; 1910.1015; CAS No. 62759; ..... None
Noise; 1910.95; employees must be notified if 85 dBA or more but no day requirement; Const. None
Hexavalent Chromium; 1910.1026; 15 working (business) days; Construction 5 working (business) days

APPENDIX E
Sample/Blank Employee Notification of Personal Sampling Results

EMPLOYEE NOTIFICATION OF PERSONAL SAMPLING RESULTS

Employee: _____ HID: _____

In accordance with PRC-PRO-SH-409, the following information is documentation of personal monitoring conducted by the Industrial Hygiene Group on you in your workplace.

Survey ID: _____

Survey Date: _____

Survey Location: _____

Survey Details: _____

AGENT	SAMPLE ID	TLV / PEL (units)	SAMPLE RESULT (8-Hour TWA)

Comments:

☐ Sample result(s) less than TLV/PEL ☐ Sample result(s) more than TLV/PEL - ACTION REQUIRED (specify)

NOTE: ***mg/m3*** *= milligrams per cubic meter,* ***ug/m3*** *= micrograms per cubic meter,* ***fibers/cc*** *= fibers per cubic centimeter,* ***ug/100 cm2*** *= micrograms per 100 square centimeters,* ***mg/100 cm2*** *= milligrams per 100 square centimeters*

If you have questions concerning your personal monitoring, please contact your Industrial Hygienist, Supervisor, or OS&H Representative for further explanation of the information presented on this form.

Notification Delivery Method: *(check all that apply)*

☐ E-mail ☐ Plant mail ☐ Hand delivery ☐ To Supervisor

☐ Other: (specify) _____

Notification Date: _____

Industrial Hygienist: _____ Phone: _____

APPENDIX F
Sample/Blank Posting of Monitoring Results

AIR SAMPLE MONITORING RESULTS

AGENT SAMPLED FOR: _____

BRIEF DESCRIPTION OF TASKS						
Comments: Information, if needed, to better explain the context of the sampling performed.						
PERSONAL AIR SAMPLE RESULTS						
CRAFT	**Sample Date/No.**	**Result (units)**	**Sample Date/No.**	**Result (units)**	**Sample Date/No.**	**Result (units)**
Millwright						
Painter						
Driller						
Notes:						
AREA AIR SAMPLE RESULTS						
	Sample Date/No.	**Result (units)**	**Sample Date/No.**	**Result (units)**	**Sample Date/No.**	**Result (units)**
Area samples are representative of overall air quality in the work area.						
Notes:						

APPENDIX G
Sample Posting of Completed Monitoring Results

BERYLLIUM AIR SAMPLING RESULTS

Equipment Release Activities, Site Fabrication Services

The following table is used to report the results of beryllium air sample results collected while working on tasks related to releasing equipment. The personal air sample results are organized by task and then by craft. Area air sample results are representative of the overall air quality in the work area. Please feel free to ask your IH Representative any questions you might have.

CLEANING GROUP 1 EQUIPMENT

Comments: Sample number indicates date sample was collected

PERSONAL AIR SAMPLE RESULTS

CRAFT	Sample Date/No.	Result (µg/m3)	Sample Date/No.	Result (µg/m3)	Sample Date/No.	Result (µg/m3)
Carpenter						
Machinist	04-1206-0421-1	<0.003	50404CMM-1	<0.004		
Millwright	50304CMM-2	<0.004				
Insulator						

Notes:

AREA AIR SAMPLE RESULTS

	Sample Date/No.	Result (µg/m3)	Sample Date/No.	Result (µg/m3)	Sample Date/No.	Result (µg/m3)
Area samples are representative of overall air quality in the work area.	04-1206-0421-3	<0.002	43004CMM-3	<0.003		

Notes:

POSTING DATE: 05/21/2008

REMOVAL DATE: 06/21/2008

APPENDIX H
Sample Posting of Explanation of Monitoring Results

Beryllium Air Sampling Results

At Hanford, we have established an airborne beryllium "action level" of 0.1 ug/m3. This is a very low level of airborne beryllium, much lower than either the OSHA or DOE allowable beryllium levels. In fact, this level is only slightly above the detection limit of the laboratory, meaning that we can't measure any lower levels. This low level was adopted to ensure that we carefully examine airborne beryllium sampling results to ensure that employee exposure to beryllium is kept at the lowest possible level.

During this work, we will be collecting both personal and area air samples to evaluate beryllium levels. Area samples, which are collected by setting a beryllium sampler in a fixed location with the work area, indicate beryllium levels in the general area where the work is being conducted. Personal samples, which are collected by attaching a sampling device to an employee, show the actual beryllium level that the employee was exposed to if he hadn't worn any respiratory protective equipment. Both area and personal sampling results will be posted for employees to review.

It is anticipated that all of the air samples on this project will have airborne beryllium levels that are less than 0.1 ug/m3, as we do not believe that any of the equipment being moved has any beryllium contamination. However, we are conducting extensive monitoring of the operations to document that no beryllium exposure is occurring. If any of the sample results should exceed our action level, they will be clearly marked on the postings, and the posting also will include the steps that are being taken to both reduce these levels and protect the health and safety of personnel working in the area. If you have any questions about the posted results, contact OS & IH for additional information.